IS IT THE GLOBAL NET?

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INTRODUCTION

Recently there's been a great deal of publicity about the "Digital Divide." As you read the various articles you begin to see, as is often the case, the same term means many different things. First, having access to technology and the ability to use it. Second, knowing how to read is essential to using information. However, the gap between those who can make effective use of information and those who can't isn't a new topic. Librarians for years have been teaching users how to find and evaluate information. Discussions at IAMSLIC conferences have talked about the problems with using information technology and the Internet for communication. It seems many of us have varying degrees of access, if we have access at all. So what is this Digital Divide we talk about?

WHAT IS THE DIGITAL DIVIDE?

Many people accept a narrow definition that focuses on the lack of access to the Internet. Some also add lack of access to a computer. that is, the physical components of the technology. Some go a bit further and talk about the digital divide as being the differential effective access to Information and Communication Technology (ICT).

The American Library Association (2001) defines the "digital divide" as the "differences due to geography, race, economic status, gender, and physical ability in:

1) access to information through the Internet, and other information technologies and services, and
2) the skills, knowledge, and abilities to use information, the Internet and other technologies.

Access and ability is not enough. Another important part of the issue is the ability to create and share relevant information.

But how do you define access? Ernest J. Wilson, Director of Center for International Development and Conflict Management at the University of Maryland, and Senior Advisor to the Global Information Infrastructure Commission of the Center for Strategic and International Studies suggests that there are several meanings for the term and that there is a distinction between formal access and effective access. Effective access requires that most of the following components are in place:

1) Physical Access: Is the physical infrastructure in place and the proper equipment available?

2) Financial Access: Does the user, whether it is an individual or an institution have the ability to pay consistently for the ICT services needed?

3) Cognitive Access: Does the user have the intellectual and training capacity to be able to find and access the needed information? Is the user able to process that information, evaluate, and consume it? In addition, does the user have the knowledge to able to send or broadcast information as well as to receive it?

4) Production or Content Access: Is the information accessed available in the user's native language? Users will find all of this access hollow if when they gain access to the Internet there is nothing in their languages or nothing relevant to their needs. This is particularly critical in developing countries where locals, such as fishermen, speak only the local dialect.

5) Political Access: Do the agencies and individuals involved have some democratic say in how the services will be designed and distributed? When that is the case suppliers are more likely to be responsive to their needs and concerns.

To focus only on the boxes and wires to connect to the Internet is to identify the tip of the iceberg. The deeper aspects of access have not been addressed. For access to be effective people must be able to understand, pay for and get the information they need once they are connected. Because of international and domestic differences, the digital divide occurs on many levels; local, country, continent and global.

Another little discussed aspect of the Digital divide is that while the gap in a particular technology appears to be shrinking, such as PC ownership, there are still great differences in application. While the "haves" purchase new equipment and the training to use it, the "have nots" as still struggling to obtain basic equipment and training. Thus the gap continues to widen.

So the Digital Divide is not a single thing, but a complex web of issues and technologies.

Add to that the realization that there is no one "Digital Divide" -- haves versus have nots or developed versus developing nations -- and one begins to see the enormity of the problem being faced not only by our organization but by the scientific community and countries.

GROWTH OF THE INTERNET

The number of Internet domains has grown from 213 in August of 1981 to almost 110 million in January of 2001 (Internet Software Consortium).

In the first quarter of 2001, there were an estimated 429 million people online, 41% of them are in North America, 27% in Europe, the Middle East and Africa, 20% in Asia and the Pacific and only 4% in South America. However, that 429 million represents only 6% of the total world population. Some 33 to 57% of those not online have no intention of going online, due to perceived lack of need (40%), no computer (33%) and cost (16%) (Digital Divide Network).

By the second quarter of 2001, there were 459 million people online with the United States and Canada losing ground and accounting for only 40% of the online population. For the first time the Nielsen/Net Ratings survey showed that in some nations, home was not the main place people accessed the Internet (Featherly 2001) . By August 2001 NUA Surveys (2001) was reporting 513.4 million online having grown from 16 million online in 1995.

THE INTERNATIONAL OR GLOBAL DIVIDE

When looking at the problems to be addressed there are some basic statistics we should keep in mind. Start with the fact that one third of the world's population has never made a phone call. Over seventy percent of the world poor live in rural and remote areas where there is, at best, scare access to information and communications technology (ICT). The predominate language used on the Internet is English, which is the native language of less than ten percent of the world's population. (DOT Force)

In many cases, decision-makers remain skeptical or unaware of the contribution that ICT can make to a country -- or, as we will later discuss, to a community, even when aware of the successes of other countries.

There are real disparities in the ability to access and use ICT between countries. There are about 14 million phone lines in all of Africa, significantly less than in Tokyo or Manhattan (Bridges.org n.d.). Despite recent rapid technological advances and perceived decreasing costs there are more Internet providers in Manhattan than in all of Africa. High connection costs, low incomes, poor infrastructure, illiteracy, lack of trained personnel, disinterest and a failure to understand the benefits of Internet all contribute to the expanding digital divide and the tremendous gaps in many of our colleagues' ability to take advantage of information access and delivery.

The Digital Opportunity Task Force (DOT Force) (2001) was created by the G8 Heads of state at the Kyushu-Okinawa Summit in July 2000. It includes public and private sector groups, non-profit organizations and international organizations representing developed and developing countries. The priority areas identified were:

1) Fostering policy, regulatory, and network readiness
2) Improving connectivity, increasing access, and lowering costs.
3) Building human capacity through targeted education and training programs
4) Encouraging participation in global e-commerce and other e-networks for sustainable economic development.

Many organizations, including the United Nations, the Benton Foundation and The Digital Opportunity Task Force of G8, the ITU, The World Bank, The World Economic Forum, and national donor agencies (including USAID, the UK's DFID and a Scandinavian Government initiative) have been studying and/or working to implement ICT in developing countries. With so many organizations working on the same problem it is essential that their stories be widely distributed. The stories need to include how the success can be replicated in the same country or region, if the success can be transported to other environments, and if the project is scalable. Then most important and the most difficult is that the studies must be put into practice. This is where many of the projects are coming up short.

THE REGIONAL DIVIDE

Looking at statistics, such as those even we quoted above, does not tell the whole story for a region. For example, in 2000 there were 1.5 million people online in Africa, of whom 1 million were in South Africa (United States Internet Council& International Technology and Trade Associates, 2001). In Latin America, Argentina, Brazil, Chile and Mexico account for 85% of the Internet accounts in the region (NUA, Yankee Group, 2001). In Asia Pacific, South Korea accounts for 45% of the number of households with home Internet access. Germany, Britain and Italy account for half of the European Internet population (Pastore, 2001).

THE DOMESTIC OR COUNTRY DIVIDE

Many people find it difficult to understand that not all access to the Internet is equal. Those areas with smaller density of population are often underserved. The common folklore about this is that it is in rural areas of developing countries, such as Bangladesh or Vietnam that there is no Internet connectivity. However, this isn't necessarily true.

While discussing this paper Martha and I found we had much in common when trying to gain Internet access on a reliable, cost-effective basis. After moving to rural Colorado I began to experience many of the "joys" that one encounters in a rural area. Many people find that what was not expensive in the city, such ISDN, cable modem or a T1 line, is simply not available at any realistic price or is too unreliable. Our own T1 line could be had for about $1,800 per month, or ISDN for about $350.00 per month. The cost of cable modem was more attractive, $60.00 per month, but it is very unstable and available only about 40% of the time. In some communities there are no options, you either have a local isp or cable modem (Carol Wilson, 2001). A Digital-subscriber-line (DSL) is not an option for many because the customer must be within 17,500 feet of a telephone switching center. So unless there are enough potential customers to make it a money-maker, the phone company is not interested in providing the service (Chapman 2001). This is the situation in many places in the United States, South Africa and the United Kingdom (Annison). This does not even mention the problems with black/brown outs, computer viruses, or system downtime which pose their own sets of problems.

Niall Guerin (2001) bemoans the fact that the technological innovation in Dublin has not been mirrored across Ireland and often waits twenty minutes to get on the Internet only to have to reconnect several times in a session.

In many countries the wait for a phone line is impressive. In Mongolia it's six years and Nepal is a close second at 5.9 years. (Clark 2001). However, some countries, such as China have made concerted efforts to expand their telecom structure through land lines and satellite.

THE IAMSLIC COMMUNITY

In early 2001 Beth and Roger Kelly sent out a notice that the IAMSLIC Executive Board would like to see the *IAMSLIC Newsletter* published online. We wanted to know how many of our members could retrieve the *Newsletter* in .pdf format from the IAMSLIC web page. At the 2000 conference we had heard many stories of people being able to access the Internet for only an hour or two a day, infrequently, not from their desk, with a very slow connection, etc. So we were concerned that this might not be a good solution for distribution of the *Newsletter*. Much to our surprise out of the 343 members only 30 responded that they would prefer to receive the *Newsletter* in print form. To our further surprise, fourteen of those were from the United States and eight were libraries, which we

think preferred to have a hardcopy to display on their shelves. Of the sixteen non-U.S mailings, six were libraries.

Martha surveyed the IAMSLIC members in Africa . There were 36 questionnaires returned.

South Africa	16
Nambia	4
Lesotho	3
Zimbabwe	3
Botswana	2
Malawi	2
Mauritius	2
Swaziland	2
Zambia	2
Tanzania	1

Of those libraries, 80.5% indicated that they had access to the Internet all or most of the time. The rest said they experience regular problems and one was never able to access the Internet.

In preparing for this paper, we sent out an e-mail survey to look at Internet access among our members. Our original survey about Internet use among IAMSLIC members received ten responses, all from the United States. We sent out a second one via e-mail. We received an additional 68 responses. Of those

61.5% were from the United States and Canada.
14.1% were from Europe and Scandinavia
12.8% were from Australia, Asia and the South Pacific
5.1 % were from South America
3.9% from Africa
2.6% from the Carribean

Since there were multiple responses in many categories, the total number responses was 132.

Looking at how we accessed the Internet, over 90% have access from their desktop.

72 of the 78 had access from their desk top.
31 had access from home. One person specifically said, she did not access the

net from home. One retiree only accessed the Internet at home.

4 people had access to the Internet only in their libraries, not on their desktops. In addition 14 others had access through their libraries.

One person only had access through his institution and ten others accessed it this way.

There is great variation in the telecommunications we use to access the Internet. Though half have access via a T1 line.

50.0% accessed it via a T1 line

13.6% via ISDN, two people commented this was not an option in their area.

26.5% via a modem with various speed connections. The most common comment here was that even though the connection might be a 56k connection the speed was often slower.

9.9% accessed it in other ways, such as leased phone lines and cable

Most found their connections to be reliable (77.3%) all day. Though one person commented that theoretically it was available all day, but not reliably so. Many commented on the slowness of the connect at various times, even though they had access through a T1 or ISDN connection. 15.2% found their connection reliable 75% of the day or more, while 6.8% had regular problems connecting and 0.1% rarely were connected. Several people commented on the problems connecting when traveling, especially from hotel rooms.

THE FUTURE

While many groups are working on the multitude of problems that make up the digital divide, the strategy outlined by the DOT Force (2001) makes great sense. They call for improving connectivity and lowering costs, helping establish national Internet strategies, and deploying information technology in health care, development aid and fostering entrepreneurship. The intended focus is the 95% of the world's population who have never been online (Christian Science Monitor 2000). Many things will have to fall into place, such as flat local phone call rates.

If wireless is to be the wave of the future, that the Europeans and Japanese will have the lead. At the same time we can hope that Guerin is wrong when he wonders if many first world countries are in danger of "creating their own digital black holes."

REFERENCES

ALA Office for Information Technology Policy. 2001. What is the Digital Divide? 17 September. [Online]. Available: http://www.ala.org/oitp/digitaldivide/what.html [18 September 2001].

Annison, Lindsey. 2001. Getting Connected in a Rural Area. *FreePint* no. 85. 12 April. [Online]. Available: http://www.freepint.com/issues/120401.htm [December 12, 2001].

Bridges.org. n.d . Spanning the Digital Divide. [Online]. Available: http://www.bridges.org/spanning/summary.html [21 June 2001].

Chapman, Cary. 2001. The treat digital divide. *Texas Monthly* 29 (March):72.

Christian Science Monitor. 2000. The Global Digital Divide. [Online]. Available: http://www.csmonitor.com/durabe/2000/07/20/p8s2.htm [8 September 2001].

Clark, Robert. 2001. Closing the Divide. *Telecom Asia* 12(March):24-29.

Digital Divide Network Staff, Benton Foundation. n.d. Digital Divide Basics Fact Sheet. [Online]. Available: http://www.digitaldividenetwork.org/content/stories/index.cfm?key=168 [9 September 2001].

Digital Opportunity Task Force. 2001. Digital Opportunities for All: Meeting the Challenge. Report of the Digital Opportunity Task Force including a proposal for a Genoa Plan of Action. 11 May . [Online]. Available: http://www.g7.utorontoca/g7/summit/2001/genoa/dotforce1.htm [25 July 2001].

Featherly, Kevin. 2001. Half a Billion People Online -- Survey. Washtech.com. 28 August . [Online]. Available: http://www.washtech.com/news/media/12164-1.html [18 September 2001].

Guerin, Niall. 2001. Re-building the Irish Information Nation. [Online]. Available: http://www.europemedia.net/shownews.asp?articleID=3457&Print=true [18 September 2001].

Internet Software Consortium. 2000. Internet Domain Survey. Number of Internet Hosts. [Online]. Available: http://www.isc.org/ds/ [1 October 2001].

National Telecommunications and Information Administration (NTIA). N.d. Falling Through the Net II: New Data on the Digital Divide. [Online]. Available: http://www.ntia.doc.gov/ntiahome/net2/falling.html [17 September 2001].

NUA. Yankee Group. 2001. Digital Divide Apparent in Latin America. 12 July. [Online]. Available: http://www.nua.ie/surveys?f=VS&art_id=905356968&rel=true [21 August 2001].

NUA Surveys. 2001. How Many Online? Worldwide. [Online]. Available: http://www.nua.ie/surveys/how_many_online/wold.htm [7 October 2001].

Pastore, Michael. 2001. 429 Million Online Worldwide. June 11. [Online]. Available: http://cyberatlas.internet.com/ [7 August 2001].

United States Internet Council and the International Technology and Trade Associates Inc. 2000. State of the Internet 2000. [Online]. Available: http://usic.wslogic.com/intro.html [8 September 2001].

Wilson, Carol. 2001. The Digital Divide Redefined. *Data Packet*: Access 2(54). 18 May. [Online.] Available: http://www.theneteconomy.com/article/0,3658,s=1855&a=14066,00.asp [June 10, 2002].

Wilson, Ernest J. III. n.d. Closing the Digital Divide: An Initial Review. Internet Policy Institute. [Online]. Available: http://www.internetpolicy.org/briefing/ErnestWilson0700.html [8 September 2001].

WEB SITES

Bridges.org, http://bridges.org

Digital Divide Network, http://www.digitaldividenetwork.org/

DIGITALDIVIDE List. To subscribe send an email message to listserv@cdinet.com, include the following line: subscribe digitaldivide yourname.

Electronic Journal on Information Systems in Developing Countries. http://www.is.cityu.edu.hk/ejisdc/ejisdc.htm

Falling Through the Net: Toward Digital Inclusion, U.S. Department of Commerce, October 2000, http://www.ntia.doc.gov/ntiahome/fttn00/contents00.html

G8 Online, http://g8.market2000.ca/about_g8.asp